

Application No. 10/824,467
Response dated: January 11, 2007
Reply to OA of: August 11, 2006

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1(currently amended). A method of manufacturing a foam from a thermoplastic elastomeric material, comprising the steps of:

using a thermoplastic elastomer as a raw material;
adding foaming agent and crosslinking agent into the raw material;
kneading and rolling the raw material for forming a continuous sheet by means of conventional devices; and

cutting the continuous sheet into a plurality of sheets and weighing the sheets and conveying the sheets to a hot-press mold for foaming by means of a conventional chemical crosslinking process to produce a foam material.

2(original). The method of claim 1, wherein the thermoplastic elastomer is a styrenic thermoplastic elastomer.

3(original). The method of claim 1, wherein the components of the thermoplastic elastomeric material in a predetermined weight percentage are poured into the conventional devices for uniformly mixing by kneading and rolling in a temperature ranged from about 90°C to 130°C.

4(original). The method of claim 3, wherein responsive to uniformly mixing the components of the thermoplastic elastomeric material, the uniformly mixed components of the thermoplastic elastomeric material are transported to a two-roll mill for rolling a predetermined number of times to form a continuous sheet with required thickness prior to cutting into a plurality of sheet members with the predetermined size by means of an automatic cutter.

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5(currently amended). The method of claim 4, further comprising the steps of:
stacking a selected number of sheet members having a required weight; and
~~cutting~~ conveying the selected number of sheet members to the hot-press mold
to heat and foam in a temperature ranged from about 150°C to 180°C in a pressure
about 90 to 250 kg/cm²,
wherein the foam material is formed after heating a predetermined period of
time.

6(original). The method of claim 5, wherein the thermoplastic elastomer is
selected from a styrenic thermoplastic elastomer including a styrene butadiene styrene
(SBS), a styrene-ethylene/butene-styrene (SEBS), a styrene isoprene styrene (SIS),
and a styrene ethylene propylene styrene (SEPS).

7(original). The method of claim 6, wherein the styrenic thermoplastic elastomer
has a percentage about 50% to 100% of the total weight of the raw material.

8(original). The method of claim 7, wherein the foaming agent has a percentage
about 1% to 15% of the total weight of the raw material.

9(original). The method of claim 8, wherein the foaming agent is
azodicarbonamide chemical foaming agent.

10(original). The method of claim 9, wherein the crosslinking agent has a
percentage about 0.05% to 1% of the total weight of the raw material.

11(original). The method of claim 10, wherein the crosslinking agent is selected
from a dicumyl peroxide, 2,5-(tert-butylperoxide)-2,5-dimethylhexane or sulfur.

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12(original). The method of claim 11, wherein the thermoplastic elastomer further comprises polymeric materials having a percentage about 0% to 50% of the total weight of the raw material.

13(original). The method of claim 12, wherein the polymeric materials comprise styrene butadiene rubber (SBR), polystyrene (PS), ethylene vinyl acetate (EVA), low density polyethylene (LDPE), and ethylene-propylene-diene terpolymer rubber (EPDM).

14(original). The method of claim 11, wherein the thermoplastic elastomer further comprises accelerator for foaming agent having a percentage about 0% to 3% of the total weight of the raw material.

15(original). The method of claim 14, wherein the accelerator for foaming agent is either a zinc oxide or a urea.

16(original). The method of claim 11, wherein the thermoplastic elastomer further comprises a processing agent selected from stearic acid or zinc stearate.

17(original). The method of claim 11, wherein the thermoplastic elastomer further comprises an additive including a coloring agent, a calcium carbonate, and wood dust.